

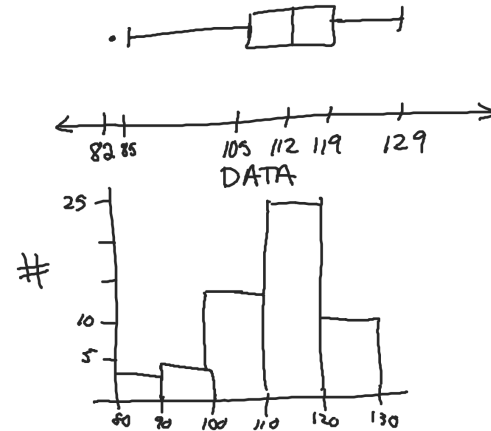
# Statistics and Data Analysis: Core Assignment 1 Practice problem #1

Use the following data:

82	98	106	108	112	115	119	122	129	108	111	118
85	99	106	109	112	116	119	122	91	108	112	118
89	100	106	110	113	116	119	122	95	126	113	
90	102	107	111	113	118	119	124	103	127	115	
90	103	108	111	113	118	119	126	104	120	121	

- 1) Choose two out of the three methods to graph the data. Boxplot, histogram, stemplot. Clearly label all graphs. (1 point: Correctly drawn graphs with labeled scales.)
- 2) Describe the distribution. (1 point: Shape, center, and spread are all described.)
- 3) Using a method from the class, identify if any outliers present in the data. Justify your answer.
- 4) You see a score of 132. Would this be unusual? Justify your answer.

## 1) GRAPHS (1 pt)



## 2) DESCRIBE (1 pt)

Shape : slight left skew, unimodal  
 Center : Med of 112 units  
 Spread : (82, 129)  
 IQR of 14 units  
 outlier @ 82 units

## 3) OUTLIERS (1 pt)

$$1.5 \times IQR = \#$$

$$Q_1 - \# = A \quad (A, B)$$

$$Q_3 + \# = B$$

$$1.5 \times 14 = 21$$

$$105 - 21 = 84 \quad (84, 140)$$

$$119 + 21 = 140$$

outlier @ 82

## 4) IS 132 UNUSUAL? (1 pt)

132 is w/in the range  
 of normal data  
 calculated above, therefore  
 it's not unusual.

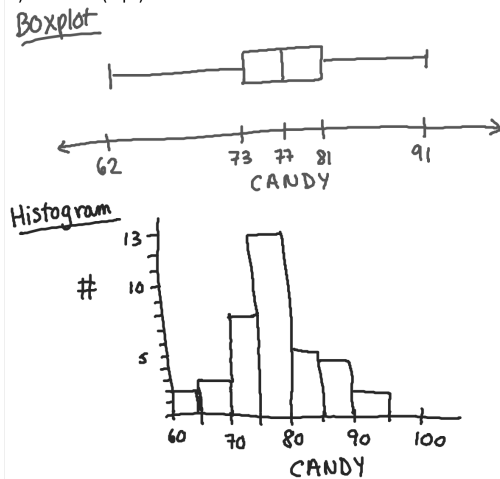
# Statistics and Data Analysis: Core Assignment 1 Practice problem #2

The following data is the number of pieces of candy received by and SRS of children on Halloween night.

62	70	73	76	77	79	82	89
62	71	73	76	77	80	82	89
65	72	74	76	78	80	85	91
66	72	75	76	78	81	86	91
67	73	75	77	78	81	88	

- 1.) Choose two out of the three methods to graph the data. Boxplot, histogram, stemplot. Clearly label all graphs. (1 point: Correctly drawn graphs with labeled scales.)
- 2.) Describe the distribution. (1 point: Shape, center, and spread are all described.)
- 3.) Using a method from the class, identify if any outliers present in the data. Justify your answer.
- 4.) A child received 130 pieces of candy. Would this be unusual? Justify your answer.

1) GRAPHS (1 pt)



2) DESCRIBE (1 pt)

Shape: roughly symmetric  
unimodal

Center: mean of 77 pieces

Spread: Std. dev. of 7.384 pieces

Range of (62, 91) pieces

Med + IQR - skewed

$\bar{x} + s$  - symmetric

3) OUTLIERS (1 pt)

$$1.5 \times IQR = 1.5(8) = 12$$

$$Q_1 - 12 = 73 - 12 = 61$$

$$Q_3 + 12 = 81 + 12 = 93$$

there are no outliers. No points outside range (61, 93)

4) IS 130 UNUSUAL? (1 pt)

Yes, 130 pieces would be unusual. 130 is outside the range of "normal" data (61, 93) and would be an outlier.